XR2000 BEAM

User's Manual Rel 1.4 **GB**

D.T.S. Illuminazione srl - ITALY
http://www.dts-lighting.it

DTS
The Lighting Company

Made in Italy

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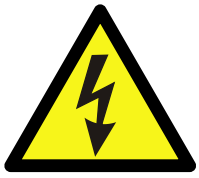
1- SYMBOLS

Graphic symbols used on this manual

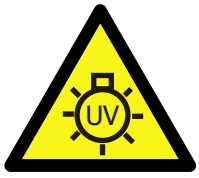
THIS SYMBOL INDICATES A HOT SURFACE



THIS SYMBOL INDICATES ELECTRIC SHOCK RISK

THIS SYMBOL INDICATES GENERAL RISK

THIS SYMBOL MEANS "DO NOT PLACE THE UNIT ON INFLAMMABLE SURFACES"



THIS SYMBOL MEANS "RADIATION FROM THIS LAMP CAN CAUSE DAMAGE TO EYES AND SKIN"

THIS SYMBOL INDICATES THE MINIMUM DISTANCE TO BE KEPT BETWEEN THE DEVICE AND THE LIT OBJECT

2- GENERAL WARNING

Read the instruction contained in this user manual carefully, as they give important information regarding safety during installation , use and maintenance.
The device is not for domestic use and must be installed by a qualified electrician or experienced person.
Always disconnect the device from the mains before replacing the lamp.
The lamp must be replaced if it has been damaged or deformed by prolonged use or overheating.
The device must always be equipped with an efficient ground connection.

3- GENERAL WARRANTY CONDITIONS

The unit is guaranteed for 24 months from the date of purchase against manufacturing material defects.

4- TECHNICAL FEATURES

XR2000 BEAM is a new compact moving head with an extremely high light power, projecting a parallel and very concentrated beam.
With its new lens unit, XR2000 BEAM generates a luminosity of an incredible 150,000 Lux at 5 metres, using only a 700 W lamp, giving an exceptional balance between performance and power consumption.
XR2000 BEAM is designed for a wide range of professional applications, like concerts, shows, tours and big events.XR2000 BEAM ensures in fact great flexibility in use, because in a single projector it incorporates a range of functions normally available only on different units (long-throw projectors with high-power lamps, PAR 64 ACL, moving heads).XR2000 BEAM offers:
* Exceptional light power (150,000 Lux at 5 metres);
* The capacity to project a highly condensed and intense beam of light even over great distances, thanks to the high efficiency of the new lens;
* Variety of colours (linear CMY synthesis + wheel with 7 colours);
* Customizable gobo wheel;
* Insertable linear frost filter (soft edge);
* Fast and uniform Pan and Tilt movements.

The XR2000 BEAM is also the ideal light for a vast range of applications in which quiet operation is a priority, thanks to its silent ventilation system and silent pan/tilt operation.
The 16 bit Pan/Tilt mechanism features an exclusive Super Speed function, and a locking system with recessed buttons. Access to every feature of the internal menu is simple and direct, thanks to the new user interface featuring a LCD backlit graphic display (128 x 64).

XR2000 BEAM
(Cod. 03.MB001.EB.L)
• Electronic ballast 90-245V 50/60 Hz • Black finish

Lamp
Lamp: Philips MSR Gold 700/2 Fastfit
Automatic switching ON of lamp in case of accidental switching OFF.
Lamp ON/OFF via DMX; Reset via DMX.
Optical group150.000 Lux at 5 m (5,5°beam angle)
Dichroic glass reflector

Dimmer / shutter / strobo
Linear dimmer
Shutter
Strobe from 0,85 flash/sec to 10 flash/sec

Colours
CMY colour synthesis system + colour wheel (7 colours + open) with linear selection for perfect 2-colour beams
Colour change with blackout sync; rainbow effect

Gobos
1 customizable rotating gobo wheel (7 gobos); extractable gobo holders
Gobo change with synchronized blackout
Gobo scrolling; Gobo shake

Frost
Frost filter (soft edge)

4- TECHNICAL FEATURES

Pan / Tilt
Pan 540°(3,9 sec.); Tilt 270°(2,6 sec.); 16-bit resolution
Super Speed function; extremely smooth and precise movements even at the highest speeds
Pan / Tilt locking system with recessed buttons
Automatic Pan/Tilt repositioning in case of knocks

DMX channels
21(default) or 16 DMX channels
Internal operating system updatable via DMX

Interface
LCD backlit graphic display (128x64)

Connections
4 XLR connectors (3-pole In and Out; 5-pole In and Out) by Neutrik
POWERCONN connector by Neutrik

Power supply
Electronic ballast: 90 - 260 V (50/60 Hz)
Power consumption: 820 W
Power saving mode (the lamp dims to 50% six seconds after shutter closure)

Standard accessories
2 x "C" GQuick clamps with "fastlock" connection

Thermal
Operating ambient temperature: -10° / 40°

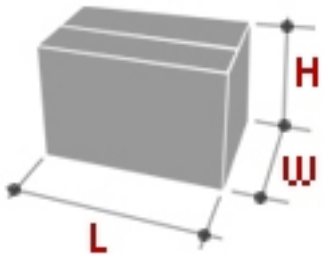
Weight
37 Kg

4- TECHNICAL FEATURES

Dimensions

Packaging Dimensions (LxWxH)
610 x 540 x 720 mm
Weight: 42 Kg

Unit Dimensions (LxWxH)
510x510x775mm
Weight: 37 Kg



5- ACCESSORIES

As standard

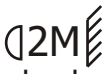
•1 x MSR Gold 700/2 Fastfit lamp
•1 x POWERCONN male cable connector (cod. 0520P014)
•1 x XLR 5 Pins male cable connector (cod. 0508B028)
•1 x XLR 5 Pins female cable connector (cod. 0508B027)
•5 x Metal Gobos
•2 x "C" Clamp GQUICK with "Fast Lock" connection 1/4 turn (max. load. 80Kg) (cod. 0521A014)
• User's manual

Optional (on request)

• Double Professional Flight case; compartment for lamps and accessories, swivel wheels, cover with hinges with-stay, dishes on cover for piling, 8 handles (2 each side) (cod. 0521C038)
• Raincover for XR2000 base (top) (cod. 03.MA009)
• Raincover for XR2000 base (bottom) (cod. 03.MA010)
• Embedding flange for XR2000 (visible display) (cod. 03.MA008)
• Embedding flange for XR2000 (no visible display) (cod. 03.MA007)
• Wireless DMX receiver card (cod. 03.LA.012)
• "C"Clamp G60 black (max. load 50Kg) (cod. 0521A004)
• "C"Clamp G60 chrome (max. load. 50Kg) (cod. 0521A004.20)
• "C"Clamp GQUICK with "Fast Lock"connection 1/4 turn (max. load. 80Kg) (cod. 0521A014)
• "C"Clamp G100 black / professional (max. load. 200Kg) (cod. 0521A015)
• Omega clamp with "Fast Lock"connection 1⁄4 turn
• Safety wire (3mm x 60 cm), ring spring catch, max. capacity load 60Kg (cod. 0521A010)

6- IMPORTANT SAFETY INFORMATION

6.1 Fire prevention:

XR2000 BEAM uses a PHILIPS MSR Gold 700/2 Fastfit lamp
The use of any other alternative lamp is not recommended and will null and void the fixture's warranty.
-Never locate the fixture on any flammable surface.
-Minimum distance from flammable materials: 1.5 MT.
-Minimum distance from the closest illuminable surface: 2 MT. 

-Replace any blown or damaged fuses only with those of identical value. Refer to the wiring diagram if there is any doubt.
-Connect the projector to mains power via a thermal magnetic circuit breaker.

6.2 Prevention of electric shock:

-High voltage is present inside the unit. Unplug the unit prior to performing any function which involves touching the inside of the moving head, including lamp replacement.
-The level of technology inherent in the XR2000 BEAM requires the assistance of specialised personnel for all servicing. Please refer to an authorised DTS service centre.
-A good earth connection is essential for proper functioning of the projector.
-Never connect the unit without proper earth connection.
-The fixture should be located in places with a good air ventilation.

6.3 Protection against ultraviolet radiation:

-Never turn on the lamp if any of the lenses, filters or ABS covering are damaged. Their respective shielding functions will only operate efficiently if they are in perfect working order.
-Never look directly the lamp when it is on.

6.4 Safety:

-The projector should always be installed with bolts, clamps and other tools that are capable of supporting the weight of the unit.
-Always use a second safety cable to sustain the weight of the unit in case of the failure of the main fixing point.
-The external surface of the unit, at various points, may exceed 70°C. Never handle the unit until at least 10 minutes have elapsed since the lamp was turned off.
-Always replace the lamp if any physical damage is evident.
-Never install the fixture in an enclosed area lacking sufficient air flow. The ambient temperature should not exceed 40°C.
-A hot lamp may explode, so always wait for at least 10 minutes prior to attempting to replace the lamp.
-Always wear suitable hand protection when handling the lamp.

6.5 Level of protection against the penetration of solid and liquid objects:

-The projector is classified as an ordinary appliance and its protection level against the penetration of solid and liquid objects is IP 20.
For outdoor use, D.T.S. reccomend the use of the dedicated raincovers:
• Raincover for XR2000 base (top) (cod. 03.MA009)
• Raincover for XR2000 base (bottom) (cod. 03.MA010)

7- MOUNTING THE LAMPS

Warning: Switch off the unit before replacing the lamp.

Philips MSR Gold 700/2 Fastfit
Power 700W
Luminous flux 50,000 lm
Colour temperature 7.500°K
Lampbase PGJX50
Rated life 750 hours

1) Using a screwdriver, loose the 3 screws A, B, C, (photo 1) and remove the metal cover .

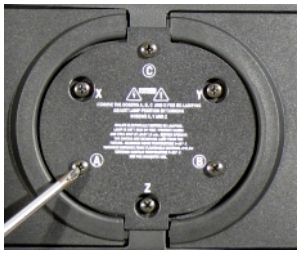


Photo 1

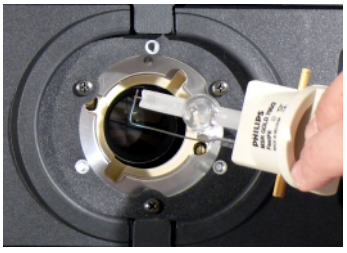


Photo 2

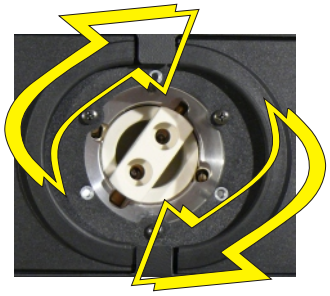


Photo 3

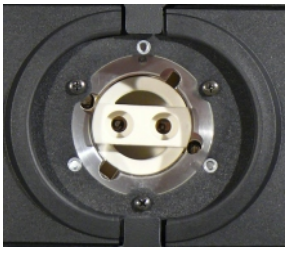


Photo 4

2) Insert the lamp (photo2).
3) Rotate the lamp 1/4 turn clockwise (photo 3 and 4).
The lamp used on XR2000 BEAM is made in quartz glass and should be handled with care. Always follow the instructions supplied in the lamp's packaging. Never touch the glass directly but use the tissue provided in the lamp's packaging. The PGJX50 lamp socket is not symmetrical.
DO NOT USE UNDUE FORCE ON THE GLASS. In case of difficulty, read again the instructions and repeat the procedure.
4) Replace the metal cover and tighten the screws A,B,C, which were previously removed.
WARNING: Never look directly at the lamp when it's lit.
Discharge lamps emits UV rays; radiation from this lamp can cause damage to eyes and skin.

7.1 Lamp alignment

Attention: we recommend to align the lamp in the optical system to avoid overheating of the dichroic filters and other components inside the unit. The lamp alignment is also essential to obtain the maximum unifirmity and luminous performance by the projection.

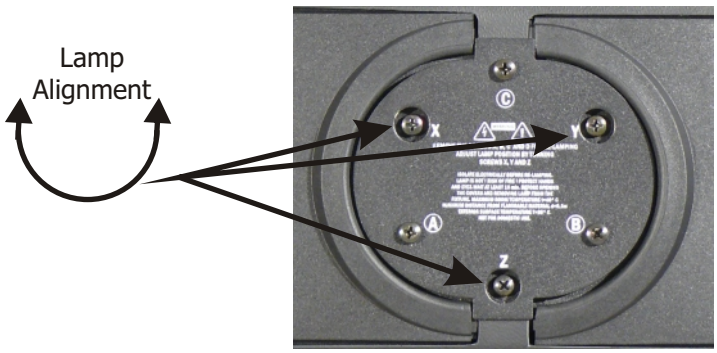


Photo 5

1) Mount the fixture in an orientation so that it may be squarely projected onto a smooth white surface no less than 3 meters away. 2) Using a console or the menu system, focus an open (white) beam onto the surface and observe the beam. 3) Using a phillips-head screw driver, rotate the 3 adjusters X, Y and Z (photo 5) until you achieve a uniform flat field.
When the lamp is correctly optimized, you will have an evenly projected light beam, with no shadows or zones wich are brighter than others.

8- **VOLTAGE AND FREQUENCY**

The XR2000 BEAM with electronic ballast can operate at 90-260 VOLT 50 or 60 Hz.

9- **INSTALLATION**

XR2000 BEAM may be either floor or ceiling mounted.
For floor mounting installations, the XR2000 BEAM is supplied with four rubber mounting feet on the base.
For ceiling mounted installations, we reccomend the use of appropriate clamps to fix the unit to the mounting surface.
The supporting structure from which the unit is hung should be capable of bearing the weight of the unit, as should any clamps used to hung it. The structure should also be sufficiently rigid so as not to move or shake whilst the XR2000 BEAM is moving.
Eight 1/4 turn Fast Locks connections placed in the base of the units allow to fix the XR2000 BEAM in any position, by using the two Fast Lock 'C' clamps provided in the box.

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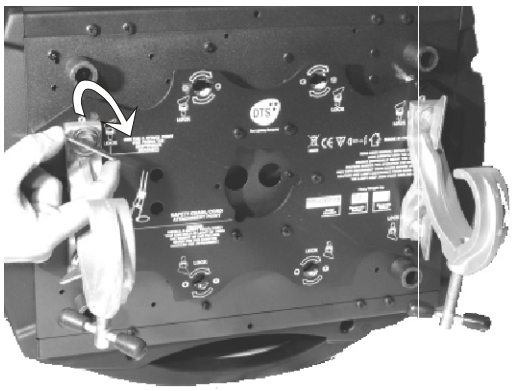
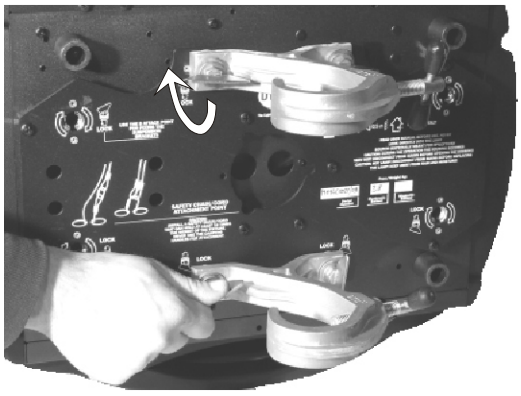
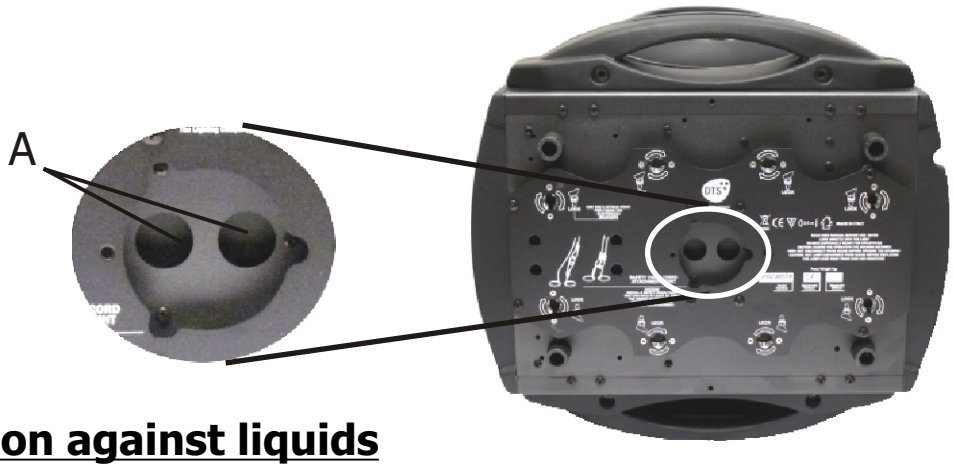




9.1- Safety cable

We recommend the use of a safety cable or chain connected to the XR2000 BEAM and to the suspension truss in order to avoid the fixture accidentally falling should the main fixing point fail. Make sure that the iron cable or chain can bear the weight of the entire unit.
You may attach the safety chain to the two holes (A) located on the base of the fixture, as shown in the picture below.



9.2- Protection against liquids

The projector contains electric and electronic components which should under no circumstances come into contact with oil, water or any other liquid. The proper unit functioning would be compromised should this occur.

9.3- Movement

The projector has a maximum movement of 540° for Pan and 270° for Tilt. DO NOT place any obstructions in the path of the projector's movement.

WARNING
Do not place any object in the path
of the projector's movement

9.4- Risk of fire

Each fixture produces heat and must be installed in a well-ventilated place. The minimum recommended distance from flammable material is 1 MT.

Minimum distance from the object being illuminated is 2 MT. 2M

9.5- Forced ventilation

You will note, on inspection, that the unit features various air inlets and cooling fans located on both the base and head of the fixture. These should, under no circumstances, be blocked or obstructed whilst the projector is in operation.
Doing so could cause the fixture to seriously overheat thereby compromising its proper operation.

9.6- Ambient temperature

The projector should never be installed in places that lack a constant air flow. The ambient temperature should NOT exceed 40°C.

10- MAINS CONNECTION

XR2000 BEAM with electronic ballast operate at 90-260 VOLT 50-60 Hz.
Prior to connecting the unit to your mains supply,
ensure that the model in your possession correctly matches
the mains supply available. For connection purposes,
ensure that your plug is capable of supporting 8 amps at 230V,
Or16 amps at 100-120 V
Strict adherence to regulatory norms is strongly recommended.

Electronic ballast
90-260V 50 / 60Hz

10.1- Protection

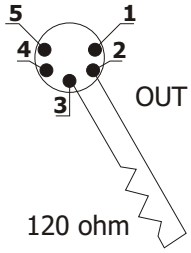
The use of a thermal magnetic circuit breaker is recommended for each XR2000 BEAM.
A good earth connection is essential for the correct operation of the projector.

11- DMX SIGNAL CONNECTION

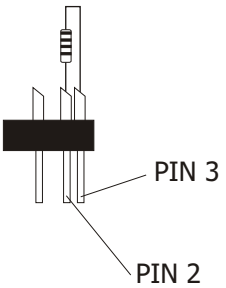
The unit operates using the digital DMX 512 (1990) signal. Connection between the mixer and the projector or between projectors must be carried out using a two pair screened ø 0.5 mm cable and a XLR 5 or 3 pins connector. Ensure that the conductors do not touch each other. Do not connect the cable ground to the XLR chassy
The plug housing must be isolated. Connect the mixer signal to the DMX IN projector plug and connect it to the next projector by connecting the DMX OUT plug on the first projector to the DMX IN plug of the second one.
This way, all the projectors are cascade connected.
NB. <u>If the display showing the DMX address flashes, then one of the following errors has occurred:</u>

- DMX signal not present
- DMX address not valid
- DMX reception problem

For Installations where long distance DMX cable connections are needed, we suggest to use a DMX terminator.
The DMX terminator is a male XLR 3-5 pins connector with a 120 ohm resistor
Between pin 2 and 3.
The DMX terminator must be plugged into the last unit (DMX out panel connector) of the DMX line.



PLACE A 120 OHM RESISTOR BETWEEN PIN 2 AND 3 OF A MALE XRL CONNECTOR AND PLUG IT INTO THE DMX OUT PANEL CONNECTOR OF THE LAST UNIT CONNECTED TO THE DMX LINE



11.1-DMX Addresses

XR2000 BEAM can be controlled with 21 (default) or 16 DMX channels.
If you want to use the unit in 21 channels, set the following addresses on the mixer:

Projector 1	A001	
Projector 2	A022	If you want to select the next projector, just add "21"
Projector 3	A043	
…..	A….	
projector 6	A106	

11.2-Selecting the DMX address

1) Press the UP-DOWN key until you reach the required DMX channel. The numbers on the display will start to flash (but the new DMX address hasn't yet been set).
2) Press ENTER to confirm your selection. The numbers on the display will stop flashing and the projector is now setted to the new DMX address.

TRICKS:
if you keep pushed the UP or DOWN keys, the channels are calculated more quickly and you get a faster selection.

12 FIRMWARE UPDATING

Warning:
This procedure require a base knolewge of computer applications and Windows Hyperterminal program. **Please refer to an authorised DTS service centre.**

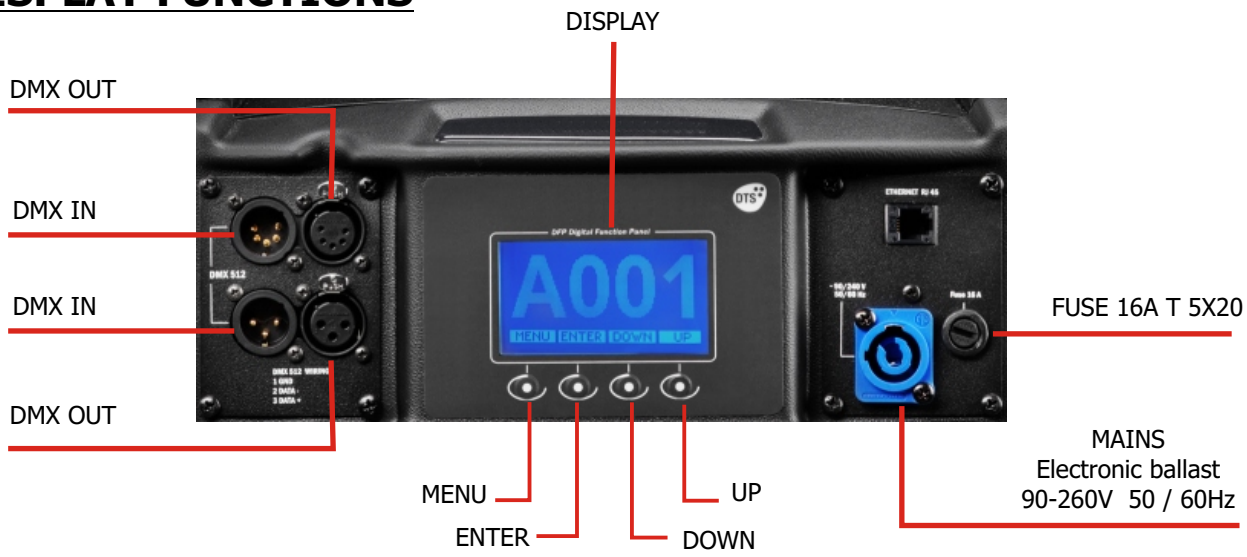
To update the software version of the XR2000 BEAM you need:
D.T.S. RED BOX interface (D.T.S. Code: 03.LA.008).
USB-DMX Drivers for the D.T.S. RED BOX interface .
(The drivers and the installation procedure are available in our web site www.dts-lighting.it)

'Updating the software version'
Please follow the procedure below to perform the update:

1. Install the D.T.S. RED BOX USB-DMX driver on the PC you will use to update the unit software.
2. Connect the D.T.S. RED BOX interface to the PC by using a USB cable.
3. Connect the D.T.S. RED BOX interface to the fixture by using a DMX cable.
4. Download the new software version into the unit by using Windows Hyperterminal program.

It will be possible to download the software from the reserved area of D.T.S. web site:
www.dts-lighting.it.

13- DISPLAY FUNCTIONS



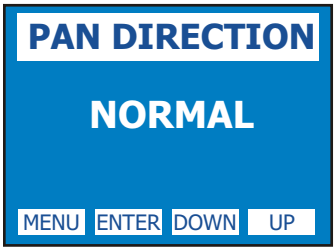
DISPLAY FUNCTIONS

The XR2000 BEAM display panel shows all the available functions . Using these functions, it is possible to change some of the parameters and add some functions. Changing the DTS setting can vary the functions of the unit so that it does not respond to the DMX 512 used to control it. Carefully follow the instructions below before carrying out any variations or selections.
NOTE: the symbol ☞ shows which key has to be pushed to obtain the desired function.

☞ Menu ☞ Up-Down **Pan Direction**

PAN DIRECTION
This menu allows to set the Pan movement.
Normal or Reversed

☞ ENTER ☞ Up-Down



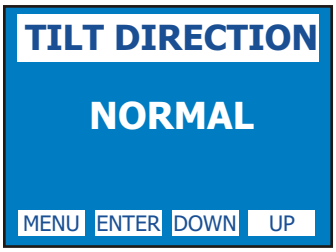
Pan movement Normal or Reversed
Default = Normal

☞ ENTER

☞ Menu ☞ Up-Down **Tilt Direction**

TILT DIRECTION
This menu allows to set the Pan movement.
Normal or Reversed

☞ ENTER ☞ Up-Down



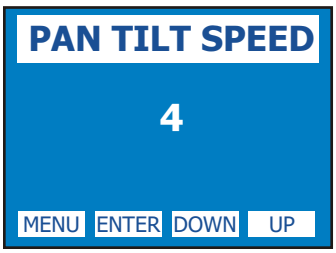
Tilt movement Normal or Reversed
Default = Normal

☞ ENTER

☞ Menu ☞ Up-Down **Pan Tilt Speed**

PAN TILT SPEED
Pan Tilt Speed control (1-4)

☞ ENTER ☞ Up-Down



Pan Tilt Speed control
Default = 4

☞ ENTER

13- DISPLAY FUNCTIONS

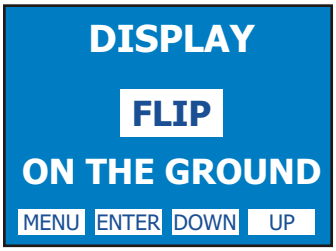
Menu Up-Down Display ENTER Up-Down

DISPLAY FLIP / STAND BY / CONTRAST

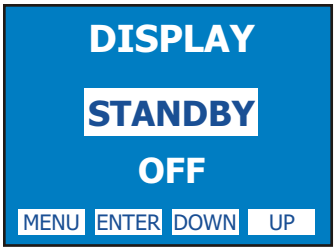
Display Flip:
Reverses display's reading depending on the mounting position
(On the ground or suspended).

Display Standby:
To turn off the display (after 5 seconds)
Or leave it always on.

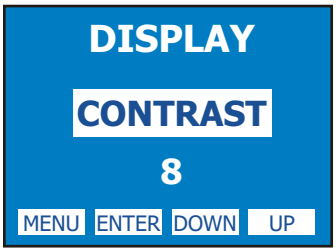
Display Contrast:
Display contrast regulation (1-16)



Display Flip ENTER
ON THE GROUND (Default)
SUSPENDED



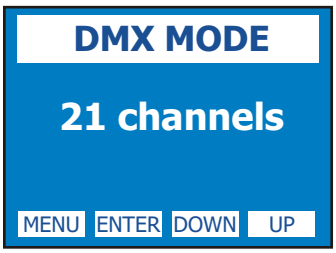
Display Standby ENTER
OFF = Display Standby disabled (Default)
ON = Display goes OFF after 5 seconds



Display Contrast ENTER
1-16 (Default = 8)

Menu Up-Down DMX Mode ENTER Up-Down

DMX MODE
To select DMX mode :
21 channels or 16 channels

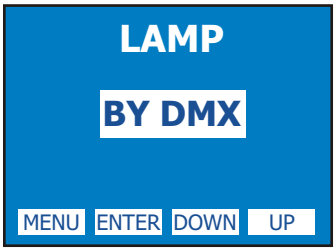


DMX mode ENTER
21 channels (Default)
16 channels

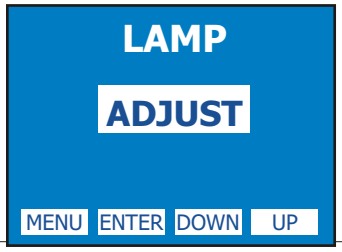
Menu Up-Down Lamp ENTER Up-Down

LAMP
Lamp always ON, always OFF,
lamp ON-OFF selectable via DMX
And lamp life time reset

ADJUST
To adjust the lamp with no mixer connected.
It's possible to set the parameters for PAN-TILT and ZOOM



BY DMX = ON / OFF via DMX (default) ENTER
ALWAYS ON = Forced ON
ALWAYS OFF = Forced OFF
RESET COUNTER = Lamp life time reset



LAMP ADJUST = To adjust the lamp with no mixer connected. ENTER
It's possible to set the parameters for PAN-TILT and ZOOM

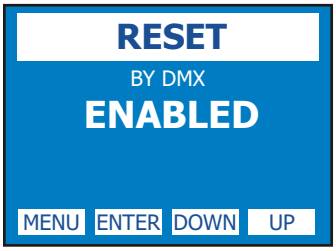
13- DISPLAY FUNCTIONS

Reset

Menu Up-Down

RESET
Reset via DMX ENABLED / DISABLED and unit reset

ENTER Up-Down



ENABLED = Reset via DMX enabled (Default)
DISABLED = Reset via DMX disabled
NOW = Unit motors reset

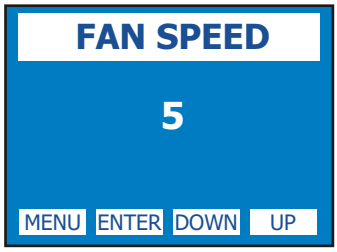
ENTER

Fan Speed

Menu Up-Down

FAN SPEED
Fan Speed control

ENTER Up-Down



Fan speed control
1-5 (Default = 5)

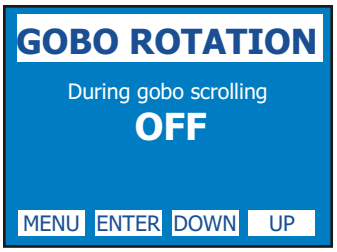
ENTER

Gobo Rotation

Menu Up-Down

GOBO ROTATION
Gobo rotation control the Rotating speed of gobo

ENTER Up-Down



ON
OFF = (Default)

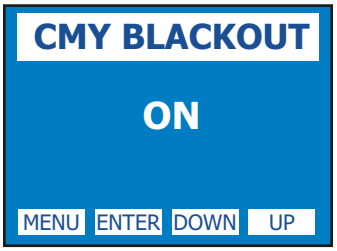
ENTER

CMY Blackout

Menu Up-Down

CMY BLACKOUT
CMY filters blades inserted at 100% if the dimmer remain closed for more than 5 seconds.
By activating this function, it will be possible to reduce substantially any visible light reflection coming out from the front lens when dimmer is closed.

ENTER Up-Down



ON = Blackout enabled (Default)
OFF = Blackout disabled

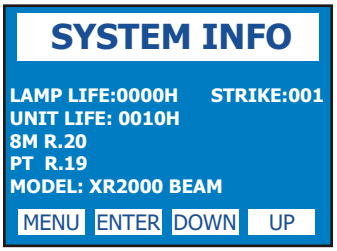
ENTER

System info

Menu Up-Down

SYSTEM INFO
Lamp life time, lamp strikes, unit life time, 8 motors card software version, Pan&Tilt card software version and unit model

ENTER Up-Down



SYSTEM INFO
Lamp life time, lamp strikes, unit life time, 8 motors card software version, Pan&Tilt card software version and unit model

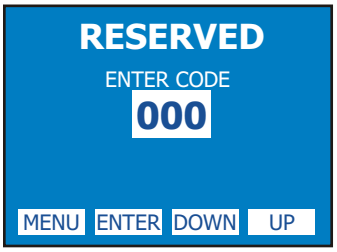
ENTER

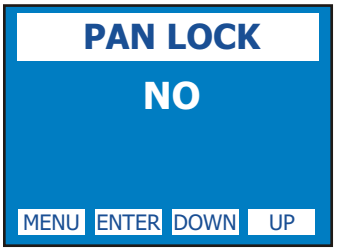
Reserved

Menu Up-Down

RESERVED
Pan lock-Tilt lock
Pan free-Tilt free
System Reboot
(Code = 100)

ENTER Up-Down





Pan Lock = Lock the Pan to the desired value
Tilt Lock = Lock the Tilt to the desired value
Pan Free = Remove power to Pan motor
Tilt Free = Remove power to Tilt motor
System Reboot = Unit Reboot without needing of turning OFF the unit

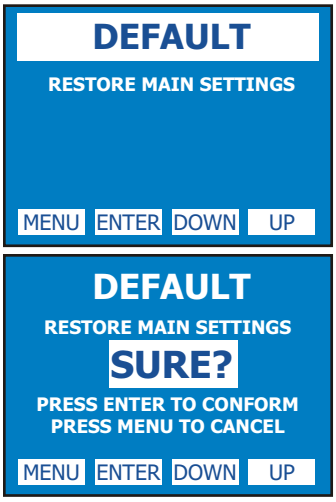
ENTER

13- DISPLAY FUNCTIONS

Menu Up-Down Default

DEFAULT
To restore main settings

ENTER Up-Down



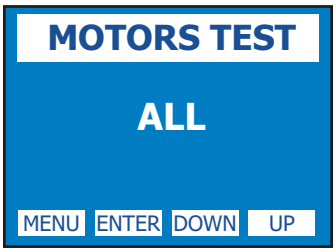
Default
To restore main settings

ENTER

Menu Up-Down Motors Test

TEST MODE
Full test and single function test.

ENTER Up-Down

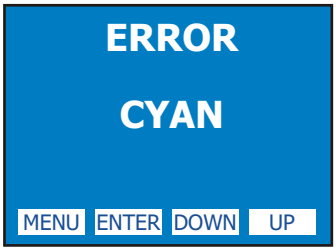


Motors Test
ALL ,PAN, TILT, DIMMER, SHUTTER, COLOUR WHEEL, CYAN, MAGENTA, YELLOW and FROST.

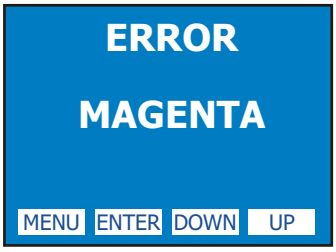
ENTER

14- ERROR MESSAGES

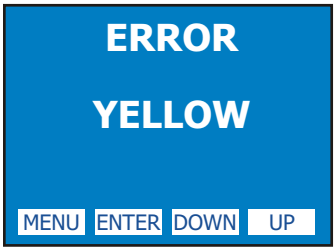
COLOUR WHEEL POSITION ERROR



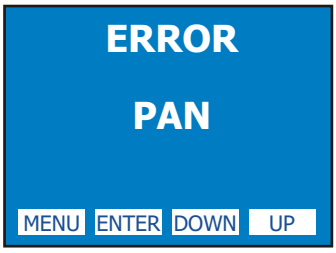
CYAN POSITION ERROR



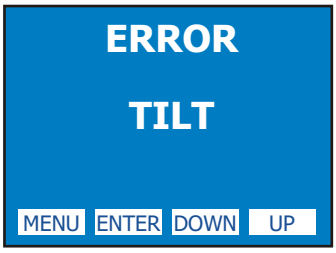
MAGENTA POSITION ERROR



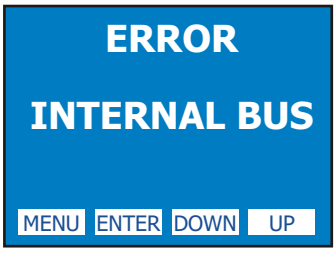
YELLOW POSITION ERROR



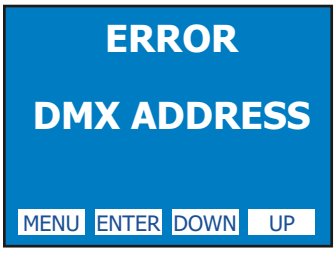
PAN REPOSITIONING ENCODER ERROR



TILT REPOSITIONING ENCODER ERROR



COMMUNICATION PROBLEM BETWEEN 8 MOTORS CARD AND PAN&TILT CARD



DMX ADDRESS ERROR

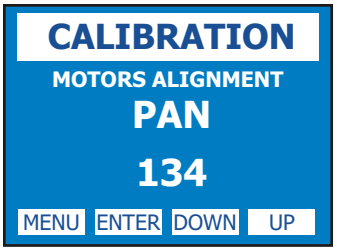
15- HIDDEN MENU

For technical personnel only.

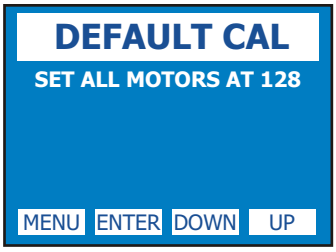
To operate this menu:

-Connect the projector to the DMX controller (DMX SIGNAL MUST BE CORRECTLY RECEIVED)

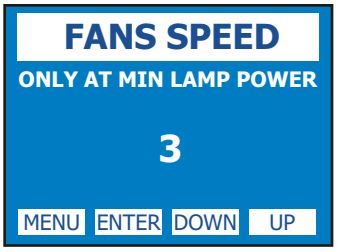
- Reset the XR2000 BEAM (reset from the MENU, not from the DMX controller!).
- While reset is running, press the MENU and ENTER keys at the same time.



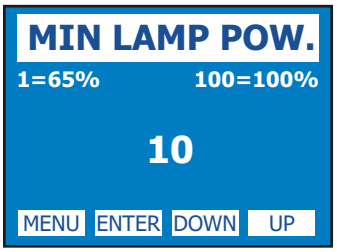
ELECTRONIC CALIBRATION OF THE MOTORS



RESET EEPROM. RESET ALL SETTINGS TO 128 VALUE



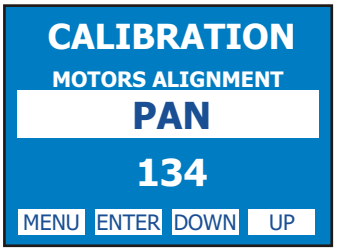
FAN SPEED WHEN DIMMER CLOSED



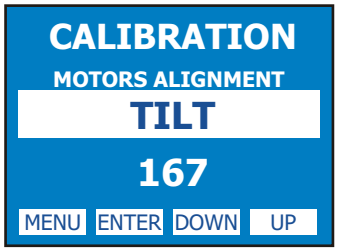
LAMP POWER WHEN DIMMER CLOSED

EXIT FROM HIDDEN MENU

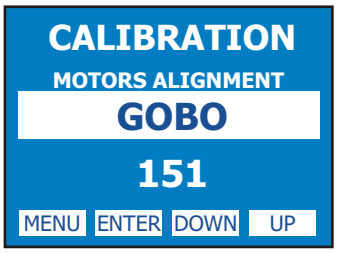
Calibration mode



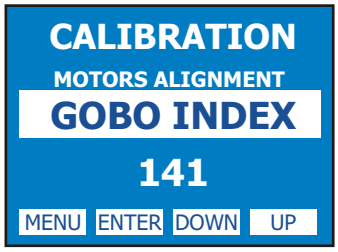
PAN ALIGNMENT
To align Pan position



TILT ALIGNMENT
To align Tilt position



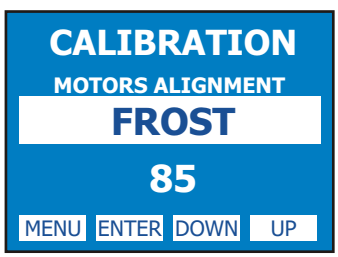
GOBO WHEEL ALIGNMENT
To align Gobo wheel



GOBO WHEEL INDEX ALIGNMENT
To align Gobo wheel Index

COLOUR WHEEL ALIGNMENT
To align Colour wheel

SHUTTER ALIGNMENT
To align Shutter blades

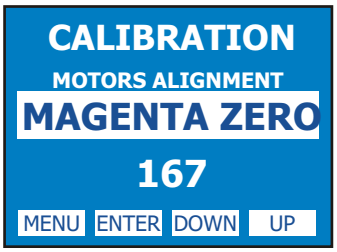


FROST ALIGNMENT
To align Frost

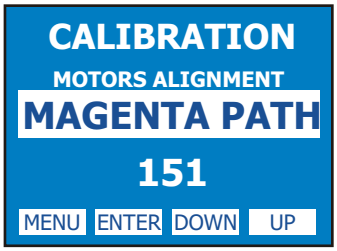
CYAN ZERO ALIGNMENT
Cyan zero position setting

Calibration mode

CYAN PATH ALIGNMENT
Cyan excursion setting



MAGENTA ZERO ALIGNMENT
Magenta zero position setting



MAGENTA PATH ALIGNMENT
Magenta excursion setting

YELLOW ZERO ALIGNMENT
Yellow zero position setting

YELLOW PATH ALIGNMENT
Yellow excursion setting

16- PAN & TILT SPEED (default: 4)

You can set the PAN and TILT motors at high speed on your XR2000 BEAM.
Press menu until you see PAN TILT SPEED.
Press ENTER and select a speed with UP-DOWN (there are 4 speeds). Confirm by pressing ENTER.

17- FAN SPEED (default: 5)

Fan speed regulation makes it possible to reduce fan noise. However, the ambient temperature must be less than 35° C.

18- OPENING THE PROJECTOR HOUSING

It is possible to inspect the inside of the projector by removing the cover as indicated below.

ATTENTION

REMOVE MAINS POWER PRIOR TO ACCESSING THE PROJECTOR'S INTERNAL COMPONENTS.

1) Using a screwdriver, loose the 3 screws A, B, C, (photo 1) and remove the metal cover .
2) Loosen the 2 screws which fix the head covers (photo 2) .
3) Once unscrewed, simply lift the covers to access the internal components (photo 3).

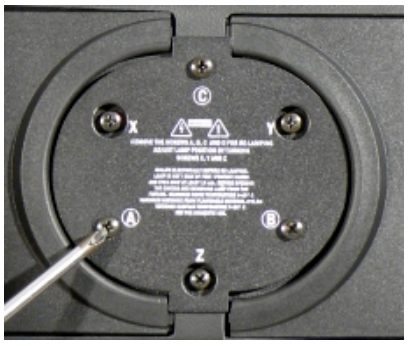


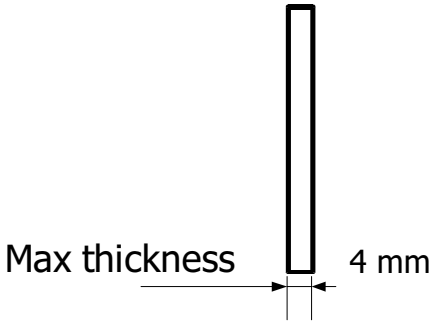
Photo 1

Photo 2

Photo 3

19- REPLACING GOBOS

XR2000 BEAM uses a mechanical system which allows the fixture's gobos to be removed without the use of special tools. Replacement gobos should be made of either heat resistant glass or metal.
An ever-increasing range of gobos is available from your DTS sales network.
Gobo dimensions are as follows:
ø external (ED) = 27.9 mm
ø of image with defined edge (ID) = 24 mm
thickness = from 0.2 to 4 mm (see catalogue)



Coated side

When an object is held up the coated side of the glass gobo there is no space between the object and its reflection.

Coated side

Uncoated side

When an object is held up the uncoated side of the glass gobo there is a space between the object and its reflection.

Uncoated side

Load with coated surface toward the light source.

Replacing gobos on the rotating gobo wheel

When replacing gobos, ensure that the projector is switched off.
1) Open the projector housing as described on page 20.
2) Remove the gobo holder to allow easier access to the gobo (photo 1).
3) Release the gobo retaining spring and carefully remove the gobo (photo 2).
4) Reverse the procedure to install a replacement gobo.

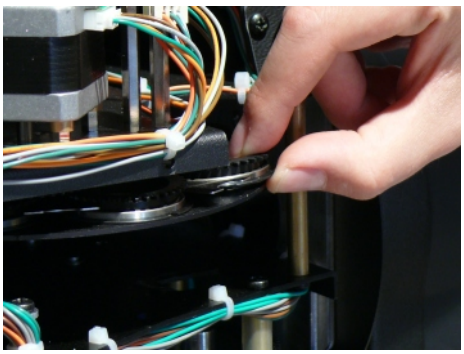


Photo 1

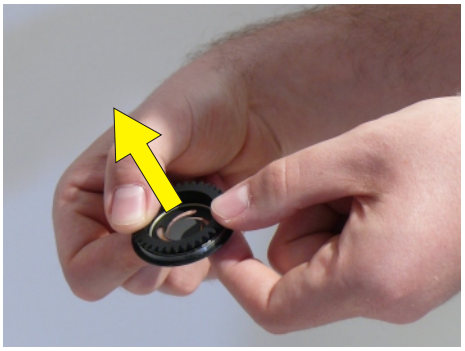


Photo 2

20- PERIODIC CLEANING

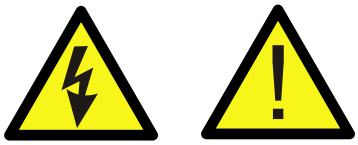
20.1- Lenses and reflectors

Even a fine layer of dust can reduce the luminous output substantially. Regularly clean all lenses and the reflector using a soft cotton cloth, dampened with a specialist lens cleaning solution.

20.2- Fans and air passages

The fans and air passages must be cleaned approximately every 6 weeks. This periodic cleaning will depend of course, on the conditions in which the projector is operating. Suitable instruments for performing this type of maintenance are a brush and a common vacuum cleaner or an air compressor. If necessary, clean the fans and air passages more frequently.

21- PERIODIC CONTROLS



Attention

Disconnect mains power prior to removing the projector housing.

Lamp

The lamp should be replaced if there is any visible damage or deformation due to heat. This will help to avoid the danger of the lamp exploding.
XR2000 BEAM lamp lifespan is about 750 hours, then it is necessary to replace it.

Mechanical parts

Periodically check all mechanical parts,gears, guides, belts, etc.for wear and tear, replacing them if necessary. Periodically check the lubrication of all components, particularly the parts subject to high temperatures. If necessary, lubricate with suitable lubricant, available from your D.T.S. distributor. Check the tension of the belts and adjust it if necessary.

Electrical components

Check all electrical components for correct earthing and proper connection of all connectors, refastening if necessary.

Fuse replacement

Locate the fuse, which protects the lamp and electronics, in the base of the XR2000 BEAM
Using a multimeter, test the condition of the fuse, replacing it with one of equivalent type if necessary.

22- DMX PROTOCOL

21 CHANNELS MODE (DEFAULT)

1 PAN msb 540°
2 PAN lsb
3 TILT msb 270°
4 TILT lsb
5 SPEED MOVEMENT
6 DIMMER
7 SHUTTER
8 COLOUR
9 COLOUR mode
10 CYAN
11 MAGENTA
12 YELLOW
13 SPEED CMY
14 MACRO CMY
15 GOBO
16 GOBO MODE
17 GOBO ROTATION/INDEX
18 GOBO INDEX FINE
19 GOBO SHAKE
20 FROST
21 RESET - LAMP

DMX CHANNEL	**1**	Parameter: **PAN msb**

DMX CHANNEL	**2**	Parameter: **PAN lsb**

DMX CHANNEL	**3**	Parameter: **TILT msb**

DMX CHANNEL	**4**	Parameter: **TILT lsb**

DMX CHANNEL	**5**	Parameter: **SPEED MOVEMENT**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 010					**Standard**
011-025					**Fast movement**
026-127					**Vector mode from fast to slow**
128-247					**Variable time reaction to DMX signal (fast to slow)**
248-255					**Silent Mode**

DMX CHANNEL	6	Parameter: **DIMMER**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-7					**Black-out**
8-255					**Proportional dimmer**

DMX CHANNEL	7	Parameter: **SHUTTER**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-019					**Black - out**
020-039					**Open**
040-059					**Black-out**
060-079					**Random Strobe**
080-089					**Strobe speed 1 min. (0,85 Hz)**
090-099					**Strobe speed 2 (1,4 Hz)**
100-109					**Strobe speed 3 (2 HZ)**
110-119					**Strobe speed 4 (3,75 Hz)**
120-129					**Strobe speed 5 (5 Hz)**
130-139					**Strobe speed 6 max. (6,75 Hz)**
140-149					**Pulse open speed 1 min.**
150-159					**Pulse open speed 2**
160-169					**Pulse open speed 3**
170-179					**Pulse open speed 4 max.**
180-189					**Pulse closed speed 1 min.**
190-199					**Pulse closed speed 2**
200-209					**Pulse closed speed 3**
210-219					**Pulse closed speed 4 max.**
220-227					**Colour and Gobo in black-out**
228-233					**Pan and Tilt in black-out**
234-255					**Open**

DMX CHANNEL	8	Parameter: **COLOUR**
		IF CHANNEL 9 = FULL COLOUR (DMX range value 0 - 63)

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-031					**Colour 1**
032-063					**Colour 2**
064-095					**Colour 3**
096-127					**Colour 4**
128-159					**Colour 5**
160-191					**Colour 6**
192-223					**Colour 7**
224-255					**Colour 8**

DMX CHANNEL	8	Parameter: **COLOUR**

IF CHANNEL 9 = FULL COLOUR (Dmx range value 64 -127)

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 27					**Colour 1**
028 - 055					**Colour 1-2**
056 - 083					**Colour 2-3**
084 - 111					**Colour 3-4**
112- 139					**Colour 4-5**
140 - 167					**Colour 5-6**
168 - 195					**Colour 6-7**
196 - 223					**Colour 7-8**
224 - 255					**Colour 8-1**

IF CHANNEL 9 = PROPORTIONAL COLOUR (Dmx range value 128 - 191)

000 - 010					**No Colour**
011-255					**Proportional colour**

IF CHANNEL 9 = RAINBOW (Dmx range value 192 - 255)

000- 009				**No Colour**
010-127				**Right Rot.Speed from Max to Min**
128-137				**Stop**
138-255				**Left Rot.speed from Min to Max**

DMX CHANNEL	9	Parameter: **COLOUR MODE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 063					**Full colour**
064 - 127					**Half colour**
128 - 191					**Proportional colour**
192 - 255					**Rainbow**

DMX CHANNEL	10	Parameter: **CYAN**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 255					**Proportionall colour**

DMX CHANNEL	11	Parameter: **MAGENTA**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 255					**Proportional colour**

DMX CHANNEL	12	Parameter: **YELLOW**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 255					**Proportional colour**

DMX CHANNEL	13	Parameter: **SPEED CMY**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 007					**No function**
008 - 255					**Variabile speed from max to min**

DMX CHANNEL	14	Parameter: **MACRO CMY**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 009					**No function**
010 - 014					**Macro 1**
015 - 019					**Macro 2**
020 - 024					**Macro 3**
025 - 029					**Macro 4**
030 - 034					**Macro 5**
035 - 039					**Macro6**
040 - 044					**Macro 7**
045 - 049					**Macro 8**
050 - 054					**Macro 9**
055 - 059					**Macro 10**
060 - 064					**Macro11**
065 - 069					**Macro 12**
070 - 074					**Macro 13**
075 - 079					**Macro 14**
080 - 084					**Macro 15**
085 - 089					**Macro 16**
090 - 094					**Macro17**
095 - 099					**Macro 18**
100-104					**Macro 19**
105-109					**Macro 20**
110-114					**Macro 21**
115-121					**Macro rainbow wait = 0**
122-128					**Macro rainbow wait = 2**
129-135					**Macro rainbow wait = 3**
136-142					**Macro rainbow wait = 4**
143-149					**Macro rainbow wait = 5**
150-156					**Macro rainbow wait = 6**
157-163					**Macro rainbow wait = 7**
164-170					**Macro rainbow wait = 8**
171-177					**Macro rainbow wait = 9**

DMX CHANNEL	14	Parameter: **MACRO CMY**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
178-185					**Macro rainbow wait = 10**
186-192					**Full colours rainbow = 0**
193-199					**Full colours rainbow = 2**
200-206					**Full colours rainbow = 3**
207-213					**Full colours rainbow = 4**
114-220					**Full colours rainbow = 5**
221-227					**Full colours rainbow = 6**
228-234					**Full colours rainbow = 7**
235-241					**Full colours rainbow = 8**
242-248					**Full colours rainbow = 9**
249-255					**Full colours rainbow = 10**

DMX CHANNEL	15	Parameter: **GOBO**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-25					**Open**
26-51					**Gobo 1**
52-77					**Gobo 2**
78-103					**Gobo 3**
104-129					**Gobo 4**
130-155					**Gobo 5**
156-181					**Gobo 6**
182-207					**Gobo 7**
208-213					**Rotation speed 1 min.**
214-219					**Rotation speed 2**
220-225					**Rotation speed 3**
226-231					**Rotation speed 4**
232-237					**Rotation speed 5**
238-243					**Rotation speed 6**
244-249					**Rotation speed 7**
250-255					**Rotation speed 8 Max**

DMX CHANNEL	16	Parameter: **GOBO MODE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-127					**Gobo Rotation Mode**
128-255					**Gobo Index Mode**

DMX CHANNEL	17	Parameter: **GOBO ROTATION/GOBO INDEX COARSE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
IF CHANNEL 16 = Gobo Rotation Mode (Dmx range value 0 - 127)					
0-9				**Stop**	
10-127				**SX Rot. Prop. Speed Max to Min**	
128-137				**Stop**	
138-255				**DX Rot. Prop. Speed Min to Max**	
IF CHANNEL 16 = Gobo Index Mode (Dmx range value 128 - 255)					
0-255				**Gobo index Coarse**	

DMX CHANNEL	18	Parameter: **GOBO INDEX FINE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Gobo Index Fine**

DMX CHANNEL	19	Parameter: **GOBO 1 SHAKE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9				**Stop**	
10-22				**Gobo Shake R-L Speed 1 Min.**	
23-35				**Gobo Shake R-L Speed 2**	
36-48				**Gobo Shake R-L Speed 3**	
49-61				**Gobo Shake R-L Speed 4**	
62-74				**Gobo Shake R-L Speed 5**	
75-87				**Gobo Shake R-L Speed 6**	
88-100				**Gobo Shake R-L Speed 7**	
101-113				**Gobo Shake R-L Speed 8**	
114-126				**Gobo Shake R-L Speed 9 Max**	
127-138				**Stop**	
139-151				**Gobo Shake L-R Speed 1 Min**	
152-164				**Gobo Shake L-R Speed 2**	
165-177				**Gobo Shake L-R Speed 3**	
178-190				**Gobo Shake L-R Speed 4**	
191-203				**Gobo Shake L-R Speed 5**	
204-216				**Gobo Shake L-R Speed 6**	
217-229				**Gobo Shake L-R Speed 7**	
230-242				**Gobo Shake L-R Speed 8**	
243-255				**Gobo Shake L-R Speed 9 Max**	

DMX CHANNEL	20	Parameter: **FROST**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-009					**No function**
010-255					**Linear frost position**

DMX CHANNEL	21	Parameter: **RESET / LAMP**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9					**No Effect**
10-60					**Lamp OFF (activ.after 3 seconds)**
61-129					**No Effect**
130-179					**Lamp ON (activ.after 3 seconds)**
180-200					**No Effect**
201-239					**Internal motor reset**
240-255					**Total Reset**

23 DMX PROTOCOL

16 CHANNELS MODE

1 PAN msb 540°
2 PAN lsb
3 TILT msb 270°
4 TILT lsb
5 SPEED MOVEMENT
6 DIMMER
7 SHUTTER
8 COLOUR
9 CYAN
10 MAGENTA
11 YELLOW
12 GOBO
13 GOBO ROTATION/INDEX
14 GOBO SHAKE
15 FROST
16 RESET - LAMP

DMX CHANNEL	**1**	Parameter: **PAN msb**

DMX CHANNEL	**2**	Parameter: **PAN lsb**

DMX CHANNEL	**3**	Parameter: **TILT msb**

DMX CHANNEL	**4**	Parameter: **TILT lsb**

DMX CHANNEL	**5**	Parameter: **SPEED MOVEMENT**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-10					**Standard**
11-25					**Fast movement**
26-127					**Vector mode from fast to slow**
128-247					**Variable time reaction to DMX signal (fast to slow)**
248-255					**Silent Mode**

DMX CHANNEL	6	Parameter: **DIMMER**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-7					**Black-out**
8-255					**Proportional dimmer**

DMX CHANNEL	7	Parameter: **SHUTTER**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-19					**Black - out**
20-39					**Open**
40-59					**Black-out**
60-79					**Random Strobe**
80-89					**Strobe speed 1 min. (0,85 Hz)**
90-99					**Strobe speed 2 (1,4 Hz)**
100-109					**Strobe speed 3 (2 HZ)**
110-119					**Strobe speed 4 (3,75 Hz)**
120-129					**Strobe speed 5 (5 Hz)**
130-139					**Strobe speed 6 max. (6,75 Hz)**
140-149					**Pulse open speed 1 min.**
150-159					**Pulse open speed 2**
160-169					**Pulse open speed 3**
170-179					**Pulse open speed 4 max.**
180-189					**Pulse closed speed 1 min.**
190-199					**Pulse closed speed 2**
200-209					**Pulse closed speed 3**
210-219					**Pulse closed speed 4 max.**
220-227					**Colour and Gobo in black-out**
228-233					**Pan and Tilt in black -out**
234-255					**Open**

DMX CHANNEL	8	Parameter: **COLOUR**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-011					**Colour 1**
012-023					**Colour 1-2**
024-035					**Colour 2**
036-047					**Colour 2-3**
048-059					**Colour 3**
060-071					**Colour 3-4**
072-083					**Colour 4**
084-095					**Colour 4-5**

DMX CHANNEL	8	Parameter: **COLOUR**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
096 - 107					**Colour 5**
108 - 119					**Colour 5-6**
120 - 131					**Colour 6**
132 - 143					**Colour 6-7**
144 - 155					**Colour 7**
156 - 167					**Colour 7-8**
168 - 179					**Colour 8**
180 - 197					**Colour 8-1**
198 - 200					**Right rotation speed 9 Max**
201 - 203					**Right rotation speed 8**
204 - 206					**Right rotation speed 7**
207 - 209					**Right rotation speed 6**
210 - 212					**Right rotation speed 5**
213 - 215					**Right rotation speed 4**
216 - 218					**Right rotation speed 3**
219 - 221					**Right rotation speed 2**
222 - 224					**Right rotation speed 1Min**
225 - 228					**Stop**
229 - 231					**Left rotation speed 1 Min**
232 - 234					**Left rotation speed 2**
235 - 237					**Left rotation speed 3**
238 - 240					**Left rotation speed 4**
241 - 243					**Left rotation speed 5**
244 - 246					**Left rotation speed 6**
247 - 249					**Left rotation speed 7**
250 - 252					**Left rotation speed 8**
253 - 255					**Left rotation speed 9 Max**

DMX CHANNEL	9	Parameter: **CYAN**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	10	Parameter: **MAGENTA**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-255					**Proportional colour**

DMX CHANNEL	11	Parameter: **YELLOW**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 255					**Proportional colour**

DMX CHANNEL	12	Parameter: **GOBO**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 -025					**Open**
026-051					**Gobo 1**
052-077					**Gobo 2**
078-103					**Gobo 3**
104-129					**Gobo 4**
130-155					**Gobo 5**
156-181					**Gobo 6**
182-207					**Gobo 7**
208-213					**Rotation speed 1 min.**
214-219					**Rotation speed 2**
220-225					**Rotation speed 3**
226-231					**Rotation speed 4**
232-237					**Rotation speed 5**
238-243					**Rotation speed 6**
244-249					**Rotation speed 7**
250-255					**Rotation speed 8 Max**

DMX CHANNEL	13	Parameter: **GOBO ROTATION/INDEX**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000 - 127				**Proportional index 0° - 360°**	
128 - 180				**Left rotation**	
181 - 202				**Stop**	
203 - 255				**Right rotation**	

DMX CHANNEL	14	Parameter: **GOBO SHAKE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9				**Stop**	
10-22				**Gobo Shake R-L Speed 1 Min.**	
23-35				**Gobo Shake R-L Speed 2**	
36-48				**Gobo Shake R-L Speed 3**	
49-61				**Gobo Shake R-L Speed 4**	
62-74				**Gobo Shake R-L Speed 5**	

DMX CHANNEL	14	Parameter: **GOBO SHAKE**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
075-087					**Gobo Shake R-L Speed 6**
088-100					**Gobo Shake R-L Speed 7**
101-113					**Gobo Shake R-L Speed 8**
114-126					**Gobo Shake R-L Speed 9 Max**
127-138					**Stop**
139-151					**Gobo Shake L-R Speed 1 Min**
152-164					**Gobo Shake L-R Speed 2**
165-177					**Gobo Shake L-R Speed 3**
178-190					**Gobo Shake L-R Speed 4**
191-203					**Gobo Shake L-R Speed 5**
204-216					**Gobo Shake L-R Speed 6**
217-229					**Gobo Shake L-R Speed 7**
230-242					**Gobo Shake L-R Speed 8**
243-255					**Gobo Shake L-R Speed 9 Max**

DMX CHANNEL	15	Parameter: **FROST**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
000-009					**No function**
010-255					**Linear frost position**

DMX CHANNEL	16	Parameter: **RESET / LAMP**

DMX range Value	Mid point DMX value	Move range (degrees)	Mode	Option	Function
0-9					**No Effect**
10-60					**Lamp OFF (activ.after 3 seconds)**
61-129					**No Effect**
130-179					**Lamp ON (activ.after 3 seconds)**
180-200					**No Effect**
201-239					**Internal motor reset**
240-255					**Total Reset**

23- 8 MOTORS CONTROL CARD

8 MOTORS CONTROL CARD

J7 Magnetic Sensors Connector

Line 1 Brown:
Line 2 Orange:

GND
ORANGE
BROWN
VCC

J1 Internal DATA Communication Connector From J8 Pan & Tilt card

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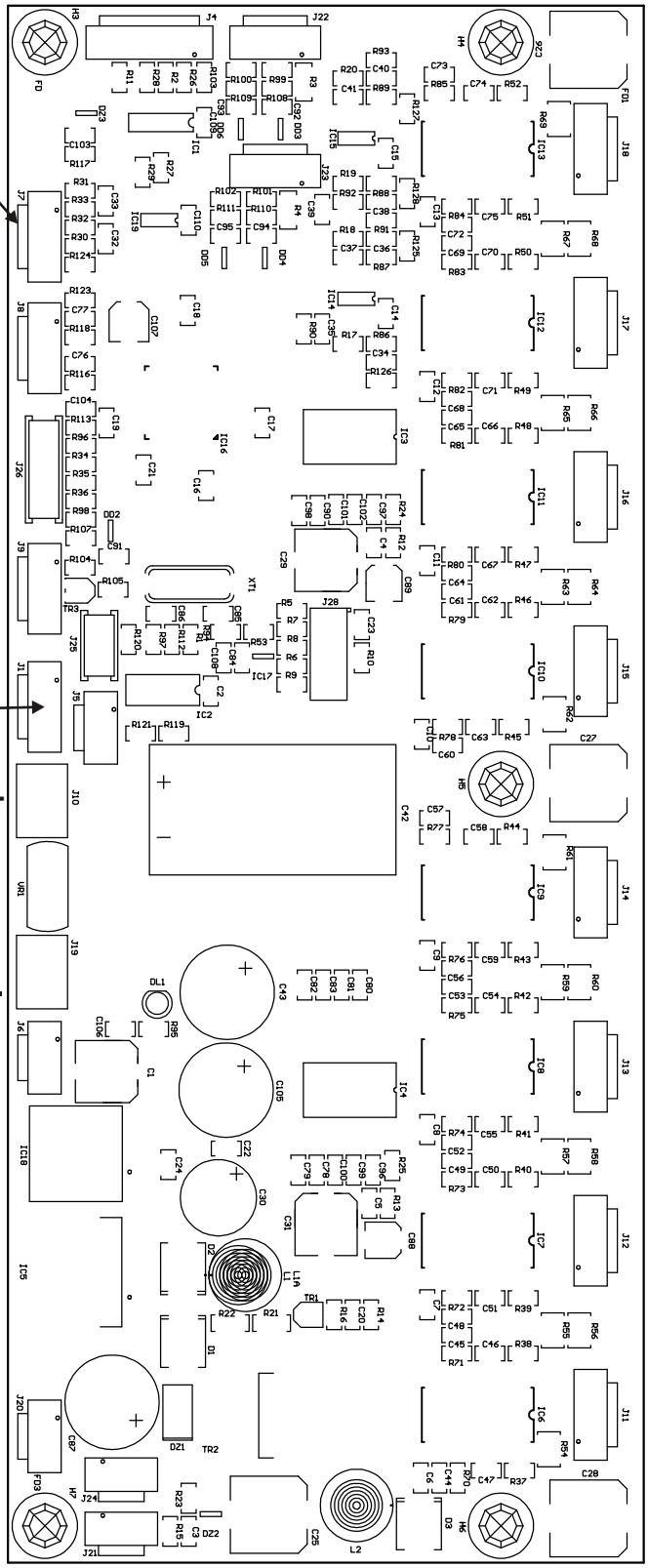
30 VDC

\−

Fans



Gobo
(BLACK)

RotGobo
(DARK GREEN)

Strobe
(YELLOW)

Frost
(PINK)

Color
(GREY)

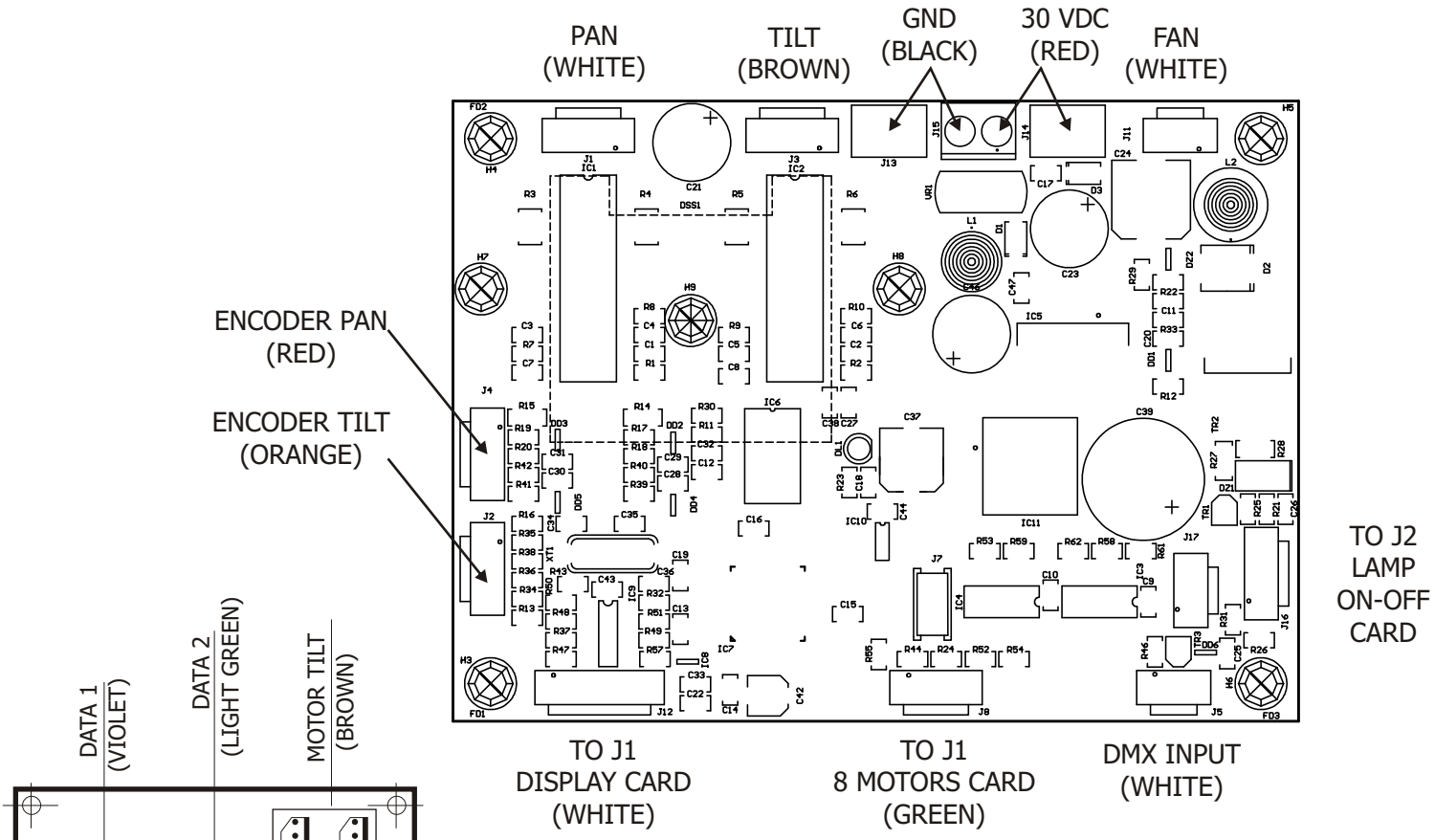
Magenta
(LIGHT BLUE)

Cyan
(GOLD)

Yellow
(BLUE)

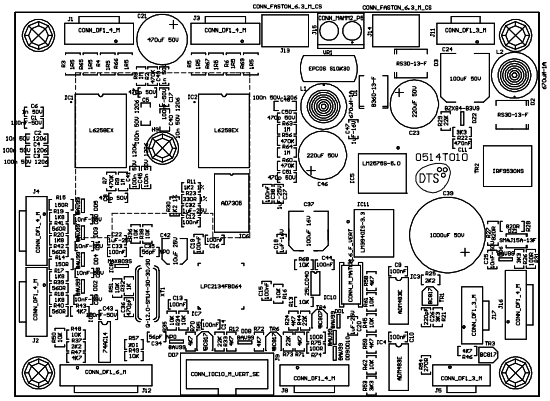
Fans

24-PAN & TILT CARD

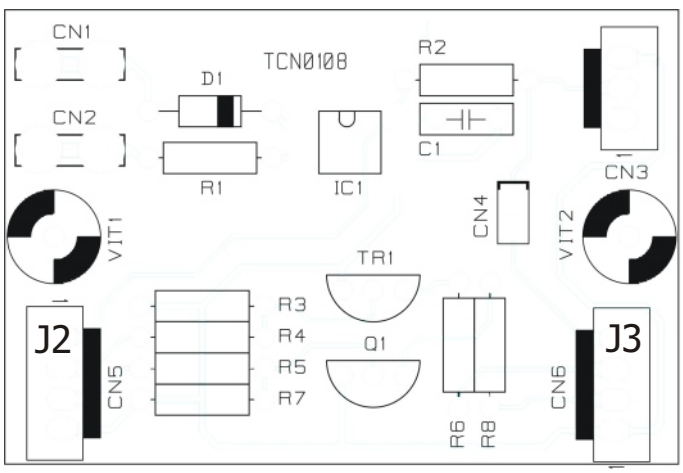


25-CABLES RESEND CARD

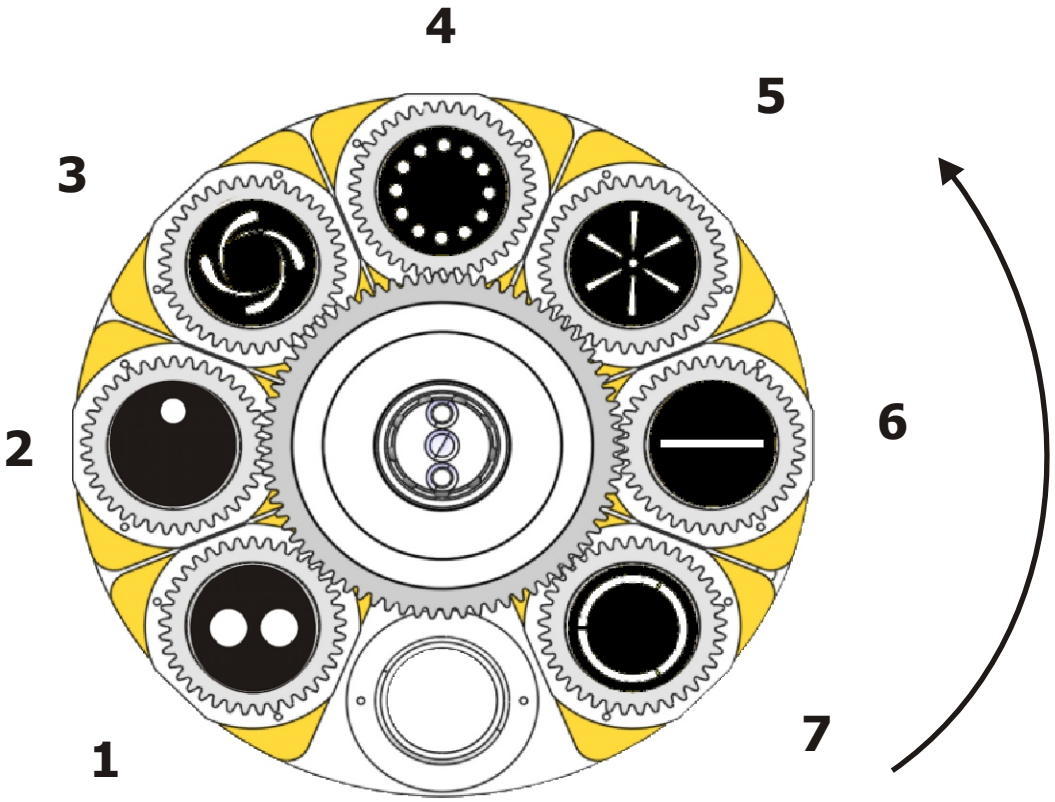
26-DISPLAY CARD



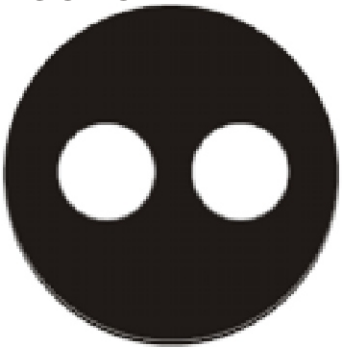
27-LAMP ON-OFF CONTROL CARD



28- ROTATING GOBO WHEEL



GOBO 1 METAL



0516G033.01

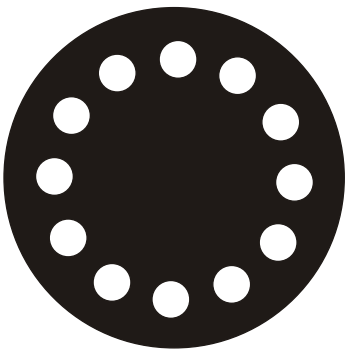
GOBO 2 METAL

0516G033.02

GOBO 3 METAL

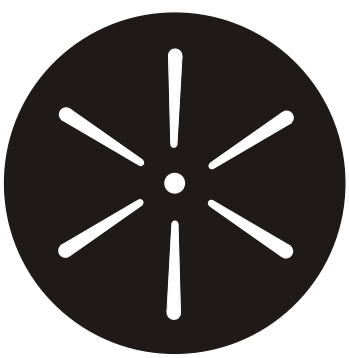
0516G033.03

GOBO 4 METAL



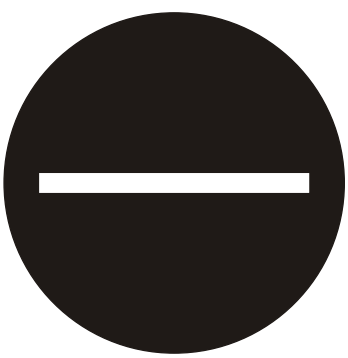
0516G033.04

GOBO 5 METAL



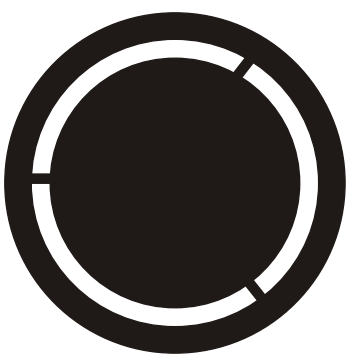
0516G033.05

GOBO 6 METAL



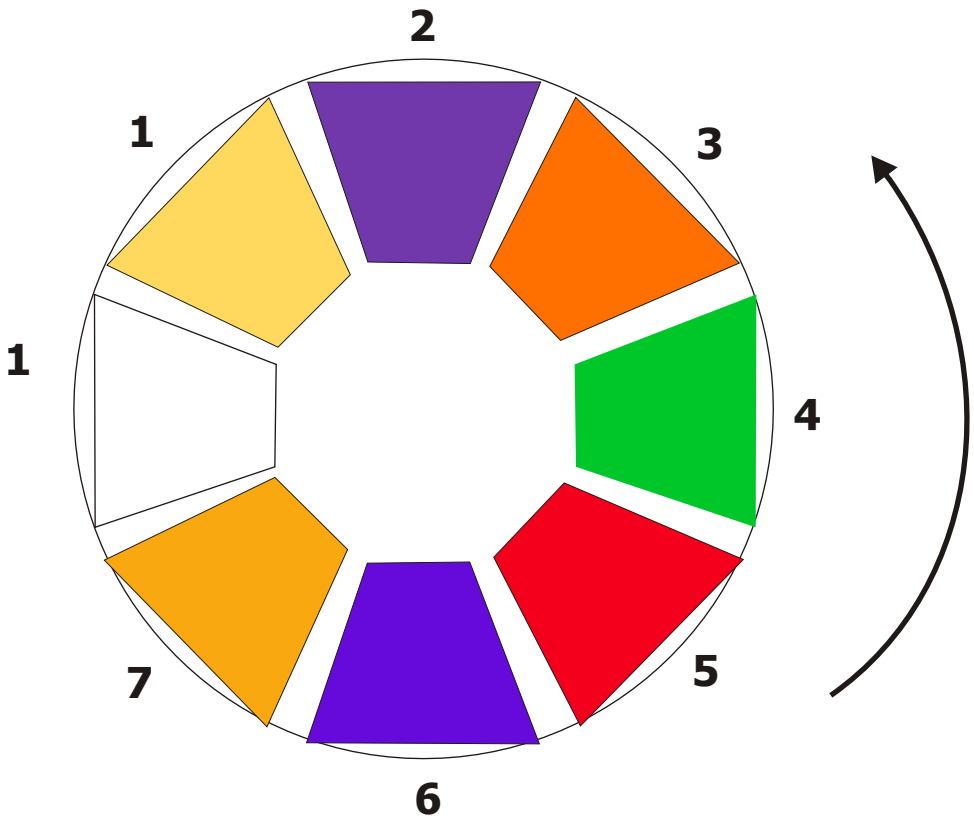
0516G033.06

GOBO 7 METAL

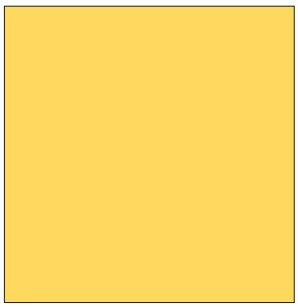


0516G033.15.M.58

29- COLOUR WHEEL

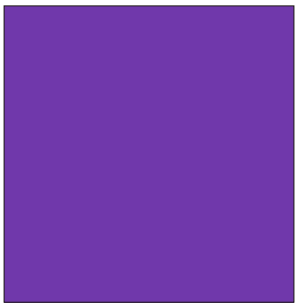


COL1



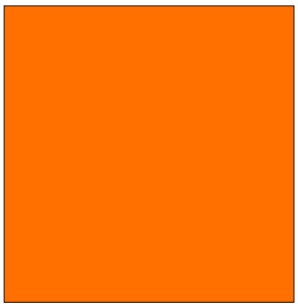
0507K004.D10
CONV.FILTER CTO
TC3256

COL2



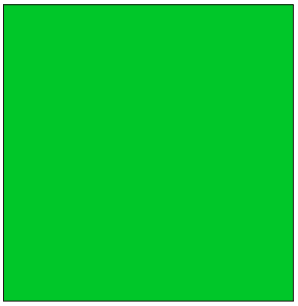
0507C046.D10
WOOD SW 460

COL3



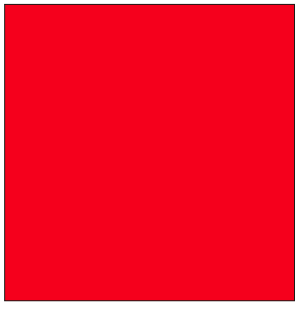
0507C051.D10
ORANGE LW590

COL4



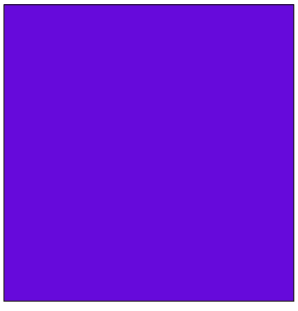
0507C042.D10
GREEN WB5055

COL5



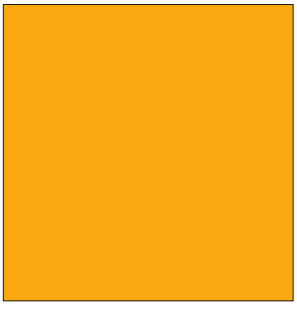
0507C047.D10
RED LW 640

COL6



0507C041.D10
DARK BLUE SW490

COL7



0507C053.D10
AMBER LW 550

30- MORE GOBOS PROVIDED IN THE PACK AS STANDARD ACCESSORIES

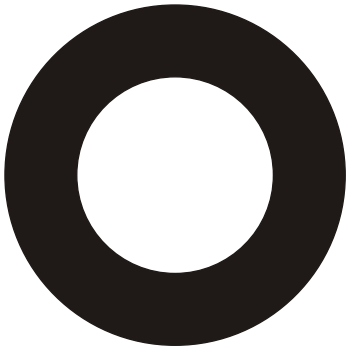
GOBO 8 METAL

0516G033.08

GOBO 9 METAL

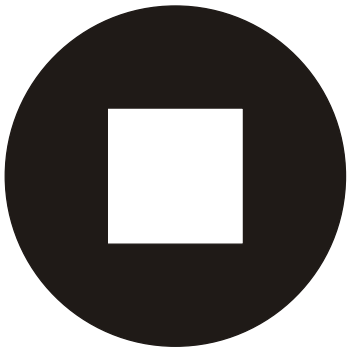
0516G033.09

GOBO 10 METAL



0516G033.10

GOBO 11 METAL



0516G033.11

GOBO 12 METAL

0516G033.12

NOTES

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